

S-8016.B1

COVERED ARC WELDING ELECTRODE
FOR WELDING OF 550MPa CLASS LOW ALLOYED STEEL

2020.12

HYUNDAI WELDING CO., LTD.



S-8016.B1

❖ **Specification**

AWS A5.5	E8016-B1
ISO 3580-A	E CrMo0.5 B 1 2

❖ **Applications**

Welding of 0.5% Cr + 0.5% Mo steel for super-heat tubes, steam pipes and heaters of boilers for thermo-electric power plant and equipment of oil refining industries.

❖ **Characteristics on Usage**

S-8016.B1 is a low hydrogen type electrode and is usable in all positions. It is suitable for welding 0.5% Cr + 0.5% Mo steel pipes and high carbon Cr-Mo steel structures.

❖ **Note on Usage**

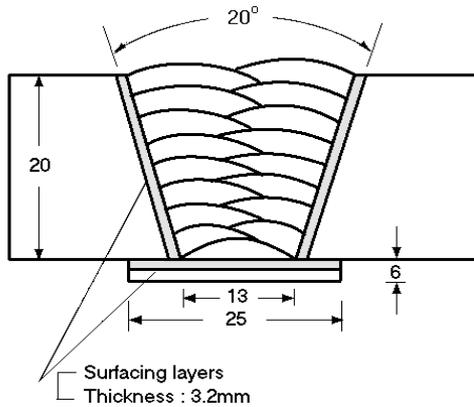
1. Dry the electrodes at 300~350°C (572~662°F) one hours before use.
2. Preheat at 160~190°C (320~374°F) and post-heat at 690°C (1274°F).
3. Keep the arc as short as possible.



Mechanical Properties & Chemical Compositions of all-Weld Metal

❖ **Welding Conditions**

Method by AWS Rules



Diameter, : 4.0 X 400mm(5/32 X 16in)
 Amp./ Volt. : 170 / 23~25
 Interpass Temp. : 170~190℃(338~374°F)
 Polarity : AC

[**Joint Preparation & Layer Details**]

❖ **Mechanical Properties of The Weld Metal**

consumable	Tensile test			PWHT	
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EL (%)	Temp. ℃(°F)	Time
S-8016.B1	505 (73,300)	589 (85,500)	31.0	690(1274)	1hr
AWS A5.5	≥460 (≥67,000)	≥550 (≥80,000)	≥19	690(1274)	1hr

❖ **Chemical Analysis of The Weld Metal(wt%)**

Consumable	Chemical Composition (%)						
	C	Si	Mn	P	S	Cr	Mo
S-8016.B1	0.05	0.57	0.85	0.012	0.005	0.51	0.51
AWS Spec	0.05~0.12	≤0.60	≤0.90	≤0.03	≤0.03	0.40~0.65	0.40 ~ 0.65

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Weldability & Diffusible Hydrogen Contents & Proper Welding conditions

❖ Weldability

Item	Division	Flat position	Vertical up position
Arc stability		Excellent	Good
Melting rate		Good	Excellent
Deposition rate		Excellent	Excellent
Resistance of spatter occurrence		Good	Good
The others		Good	Good

❖ Diffusible Hydrogen Contents of Weld Metal

Consumable	Welding current	Diffusible hydrogen contents (ml/gr. Weld metal)					Drying condition of test electrode
		X ₁	X ₂	X ₃	X ₄	Avg.	
S-8016.B1	AC 170 Amp.	7.02	7.32	7.50	7.44	7.32	350°C (662°F) x 1hr.

❖ Sizes Available and Recommended Currents

Diameter, mm(in)		2.6 (3/32)	3.2 (1/8)	4.0 (5/32)	5.0 (3/16)	6.0 (15/64)
Length, mm(in)		350(14)	350(14)	400(16)	400(16)	450(18)
Recommended current range (AC or DC + Amp.)	Flat (1G-PA)	55 ~ 90	90 ~ 130	130 ~ 190	190 ~ 240	250 ~ 300
	3G (PF) & 4G,5G (PE)	50 ~ 80	80 ~ 120	120 ~ 170	-	-

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